



USSN 10.754484 Sequence Listing (19Oct2004).txt
SEQUENCE LISTING

<110> HENDERSON, DANIEL R.

<120> METHODS OF TREATING LUNG DISEASES

<130> 057220/2302

<140> 10/754,485

<141> 2004-01-09

<150> 60/439,373

<151> 2003-01-09

<150> 60/480,047

<151> 2003-06-20

<150> 60/494,841

<151> 2003-08-12

<160> 54

<170> PatentIn Ver. 3.2

<210> 1

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 1

caccatgtac aggatgcaac tgctgtcttg

30

<210> 2

<211> 51

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 2

gatttgccgc taccggaagt cgaccagtt agtggtgaga tgatgctttg a

51

<210> 3

<211> 794

<212> DNA

<213> Homo sapiens

<400> 3

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ttctacaaag aaaacacagc tacaactgga gcatttactg ctggatttac agatgatttt 180
gaatggaatt aataattaca agaatcccaa actcaccagg atgtcacat ttaagtttta 240
catgcccaag aaggccacag aactgaaaca tcttcagtgt ctagaagaag aactcaaacc 300
tctggaggaa gtgctaaatt tagctcaaag caaaaacttt cacttaagac ccagggactt 360
aatcagcaat atcaacgtaa tagttctgga actaaaggga tctgaaacaa cattcatgtg 420
tgaatatgct gatgagacag caaccattgt agaatttctg aacagatgga ttaccttttg 480
tcaaagcatc atctcaacac taacttgata attaatgtct tcccacttaa aacatatcag 540
gccttctatt tatttaaata tttaaatttt atatttattg ttgaatgtat ggtttgctac 600
ctattgtaac tattattctt aatcttaaaa ctataaatat ggatctttta tgattctttt 660
tgtaagccct aggggtctta aaatgggttc acttatttat cccaaaatat ttattattat 720
gttgaatgtt aaatatagta tctatgtaga ttggttagta aaactattta ataaatttga 780
taaataataa aaaa

794

USSN 10.754484 Sequence Listing (19Oct2004).txt

<210> 4
 <211> 462
 <212> DNA
 <213> Homo sapiens

<400> 4
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 gcacctactt caagttctac aaagaaaaca cagctacaac tggagcattt actgctggat 120
 ttacagatga ttttgaatgg aattaataat tacaagaatc ccaaactcac caggatgctc 180
 acattttaagt ttacatgcc caagaaggcc acagaactga aacatcttca gtgtctagaa 240
 gaagaactca aacctctgga ggaagtgcta aatttagctc aaagcaaaaa ctttcaacta 300
 agaccaggga acttaatcag caatatcaac gtaatagttc tggaactaaa gggatctgaa 360
 acaacattca tgtgtgaata tgctgatgag acagcaacca ttgtagaatt tctgaacaga 420
 tggattacct tttgtcaaag catcatctca acactaactt ga 462

<210> 5
 <211> 13
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Spacer peptide

<400> 5
 Gly Ser Thr Ser Gly Ser Gly Lys Ser Ser Glu Gly Lys
 1 5 10

<210> 6
 <211> 53
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

<400> 6
 gtagcggcaa atcctctgaa ggcaaacagg tgcagctggt gcaatcaggg gga 53

<210> 7
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

<400> 7
 acctaggacg gtgaccttgg tccc 24

<210> 8
 <211> 59
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

<400> 8
 gatccctagg tggcggcgga agcggcggag gctccgcacc tacttcaagt tctacaaag 59

<210> 9

USSN 10.754484 Sequence Listing (19Oct2004).txt

<211> 38
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Primer
 <400> 9
 ctcgagttat taagtttagtg ttgagatgat gctttgac 38

<210> 10
 <211> 14
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Synthetic peptide
 <400> 10
 Glu Gly Lys Ser Ser Gly Ser Gly Ser Glu Ser Lys Glu Phe
 1 5 10

<210> 11
 <211> 31
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Primer
 <400> 11
 gatcgatatc atgtacagga tgcaactgct g 31

<210> 12
 <211> 34
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Primer
 <400> 12
 cgatgctagc agttagtggt gagatgatgc ttg 34

<210> 13
 <211> 43
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Primer
 <400> 13
 atggcggttga cctttgcggt actggtggcc ctctggtgc tca 43

<210> 14
 <211> 39
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Primer

USSN 10.754484 Sequence Listing (19Oct2004).txt

<400> 14
ccagttttca ttccttactt cttaaacttt cttgcaagt 39

<210> 15
<211> 567
<212> DNA
<213> Homo sapiens

<400> 15
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tctgtgggct gtgatctgcc tcaaaccac agcctgggta gcaggaggac cttgatgctc 120
ctggcacaga tgaggagaat ctctcttttc tcctgcttga aggacagaca tgactttgga 180
tttccccagg aggagtttgg caaccagttc caaaaggctg aaaccatccc tgcctccat 240
gagatgatcc agcagatctt caatctcttc agcacaaagg actcatctgc tgcttgggat 300
gagaccctcc tagacaaatt ctacactgaa ctctaccagc agctgaatga cctggaagcc 360
tgtgtgatac aggggggtggg ggtgacagag actcccctga tgaaggagga ctccattctg 420
gctgtgagga aatacttcca aagaatcact ctctatctga aagagaagaa atacagccct 480
tgtgcctggg aggttgtcag agcagaaatc atgagatctt tttctttgtc aacaaacttg 540
caagaaggtt taagaagtaa ggaataa 567

<210> 16
<211> 53
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 16
accgtcctag gtggtggcgg agggatcatgt gatctgcctc aaaccacag cct 53

<210> 17
<211> 55
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 17
tcctcgaggt cgacgctagc ttattattcc ttacttctta aactttcttg caagt 55

<210> 18
<211> 1269
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: sFV-alpha-IFN chimera nucleotide sequence

<400> 18
atgaaatacc tattgcctac ggcagccgct ggattgttat tactcgcggc ccagccggcc 60
atggcccagg tacagctgca gcaatcaggg ggaggcgtgg tccagcctgg gaggtccctg 120
agactctcct gtgcagcctc tggattcacc ttcagtagct atgctatgca ctgggtccgc 180
caggctccag ggaaggggct ggagtgggtc tcagctatta gtggtagtgg tggtagcaca 240
tactacgcag actccgtgaa gggccgggtc accatctcca gagacaacgc caagaactca 300
ctgtatctgc aaatgaacag cctgagagcc gaggacacgg ctgtgtatta ctgtgcgaga 360
gatacccgag ggtacttcga tctctggggc cgtggcaccc tggtcaccgt ctctcagggt 420
ggcggagggt catctgagct gactcaggac cctgctatgt ctgtggcctt gggacagaca 480
gtcagaatca catgtcaagg ggacagtctc agaaagtatc atgcaagctg gtatcagcag 540
aagccagggc agggcccctgt tcttgtcatc tatggttaaga atgaacgtcc ctcagggatc 600
ccagagcgat tctctgggtc cacctcagga gacacagctt ccttgaccat cagtgggctc 660
caggcggaag atgaggctga ctattactgt cactcccag actctaattgc tgatcttgtg 720

USSN 10.754484 Sequence Listing (19Oct2004).txt

| | | | | | | |
|------------|------------|------------|------------|-------------|-------------|------|
| gtgttcggcg | gagggaccaa | ggtcaccgtc | ctaggtggtg | gcggaggggc | atgtgatctg | 780 |
| cctcaaacc | acagcctggg | tagcaggagg | accttgatgc | tcctggcaca | gatgaggaga | 840 |
| atctctctt | tctcctgctt | gaaggacaga | catgactttg | gatttcccca | ggaggagttt | 900 |
| ggcaaccagt | tccaaaaggc | tgaaaccatc | cctgtcctcc | atgagatgat | ccagcagatc | 960 |
| ttcaatctct | tcagcacaaa | ggactcatct | gctgcttggg | atgagaccct | cctagacaaa | 1020 |
| ttctacactg | aactctacca | gcagctgaat | gacctggaag | cctgtgtgat | acaggggggtg | 1080 |
| ggggtgacag | agactcccct | gatgaaggag | gactccattc | tggctgtgag | gaaatacttc | 1140 |
| caaagaatca | ctctctatct | gaaagagaag | aaatacagcc | cttgtgcctg | ggagggttgtc | 1200 |
| agagcagaaa | tcagtagatc | tttttctttg | tcaacaaact | tgcaagaaaag | tttaagaagt | 1260 |
| aaggaataa | | | | | | 1269 |

<210> 19
 <211> 41
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

<400> 19
 cctcgagata tcgccaccat gaccaacaag tgtctcctcc a 41

<210> 20
 <211> 37
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

<400> 20
 ctctagatct tcagctagcg tttcggaggt aacctgt 37

<210> 21
 <211> 564
 <212> DNA
 <213> Homo sapiens

| | |
|------------|--|
| <400> 21 | |
| atgaccaaca | agtgtctcct ccaaattgct ctctgtttgt gcttctccac tacagctctt 60 |
| tccatgagct | acaacttgct tggattccta caaagaagca gcaattttca gtgtcagaag 120 |
| ctcctgtggc | aattgaatgg gaggcttgaa tactgcctca aggacaggat gaactttgac 180 |
| atccctgagg | agattaagca gctgcagcag ttccagaagg aggacgccgc attgaccatc 240 |
| tatgagatgc | tccagaacat ctttgctatt ttcagacaag attcatctag cactggctgg 300 |
| aatgagacta | ttgttgagaa cctcctggct aatgtctatc atcagataaa ccatctgaag 360 |
| acagtccttg | aagaaaaact ggagaaagaa gatttcacca ggggaaaact catgagcagt 420 |
| ctgcacctga | aaagatatta tgggaggatt ctgcattacc tgaaggccaa ggagtacagt 480 |
| cactgtgcct | ggaccatagt cagagtggaa atcctaagga acttttactt cattaacaga 540 |
| cttacagggt | acctccgaaa ctga 564 |

<210> 22
 <211> 54
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

<400> 22
 accgtcctag gtggtggcgg agggatcaatg agctacaact tgcttgatt ccta 54

<210> 23
 <211> 54

USSN 10.754484 Sequence Listing (19Oct2004).txt

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 23

tcctcgaagg cgacgctagc ttattagttt cggaggtaac ctgtaagtct gtta 54

<210> 24

<211> 1272

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: sFv-beta-IFN chimera nucleotide sequence

<400> 24

| | | | | | | |
|------------|------------|------------|-------------|------------|-------------|------|
| atgaaatacc | tattgcctac | ggcagccgct | ggattgttat | tactcgcggc | ccagccggcc | 60 |
| atggcccagg | tgcagctgca | gcaatcaggg | ggaggcgtgg | tccagcctgg | gaggtcccctg | 120 |
| agactctcct | gtgcagcctc | tggattcacc | ttcagtagct | atgctatgca | ctgggtccgc | 180 |
| caggctccag | ggaaggggct | ggagtgggtc | tcagctatta | gtggtagtgg | tggtagcaca | 240 |
| tactacgcag | actccgtgaa | gggccgggtc | accatctcca | gagacaacgc | caagaactca | 300 |
| ctgtatctgc | aaatgaacag | cctgagagcc | gaggacacgg | ctgtgtatta | ctgtgcgaga | 360 |
| gatacccag | ggtacttcga | tctctggggc | cgtggcaccc | tggtcaccgt | ctcctcaggt | 420 |
| ggcggagggt | catctgagct | gactcaggac | cctgctatgt | ctgtggcctt | gggacagaca | 480 |
| gtcagaatca | catgtcaagg | ggacagtctc | agaaagtatc | atgcaagctg | gtatcagcag | 540 |
| aagccagggc | aggcccctgt | tcttgtcatc | tatggtaaga | atgaacgtcc | ctcagggatc | 600 |
| ccagagcgat | tctctgggtc | cacctcagga | gacacagctt | ccttgaccat | cagtgggctc | 660 |
| caggcggaag | atgaggctga | ctattactgt | cactcccag | actctaattg | tgatcttgtg | 720 |
| gtgttcggcg | gagggaccaa | ggtcaccgtc | ctagggtggtg | gcggagggtc | aatgagctac | 780 |
| aacttgcttg | gattcctaca | aagaagcagc | aattttcagt | gtcagaagct | cctgtggcaa | 840 |
| ttgaatggga | ggcttgaata | ctgcctcaag | gacaggatga | actttgacat | ccctgaggag | 900 |
| attaagcagc | tgcagcagtt | ccagaaggag | gacgccgc | tgaccatcta | tgagatgctc | 960 |
| cagaacatct | ttgctatitt | cagacaagat | tcattctagca | ctggctggaa | tgagactatt | 1020 |
| gttgagaacc | tcctggctaa | tgtctatcat | cagataaacc | atctgaagac | agtcctggaa | 1080 |
| gaaaaacttg | agaaagaaga | tttcaccagg | ggaaaaactca | tgagcagtct | gcacctgaaa | 1140 |
| agatattatg | ggaggattct | gcattacctg | aaggccaagg | agtacagtca | ctgtgccttg | 1200 |
| accatagtca | gagtggaaat | cctaaggaac | ttttacttca | ttaacagact | tacaggttac | 1260 |
| ctccgaaact | aa | | | | | 1272 |

<210> 25

<211> 99

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 25

ggatatcgcc accatggatg caatgaagag agggctctgc tgtgtgctgc tgctgtgtgg 60
agcagctctc gtttcgcca gccaggta gctgcagca 99

<210> 26

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 26

gcgcggccgct caacctagga cggtgacctt ggtccctccg ccgaacacca 50

USSN 10.754484 Sequence Listing (19Oct2004).txt

<210> 27
 <211> 73
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

<400> 27
 gtcctaggtg gcggcggaag cggcggaggc tccatgagct acaacttgct tggattccta 60
 caaagaagca gca 73

<210> 28
 <211> 69
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

<400> 28
 tgcggccgct tagctagctt attagtttcg gaggtaacct gtaagtctgt taatgaagta 60
 aaagttcct 69

<210> 29
 <211> 1284
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: TPA SigP-APL10-IFN-beta

<400> 29
 atggatgcaa tgaagagagg gctctgctgt gtgctgctgc tgtgtggagc agtcttcgtt 60
 tcgcccagcc aggtacagct gcagcaatca gggggaggcg tgggtccagcc tgggagggtcc 120
 ctgagactct cctgtgcagc ctctggattc accttcagta gctatgctat gcactgggtc 180
 cgccaggctc caggggaagg gctggagtgg gtctcagcta ttagtggttag tggtggttagc 240
 acatactacg cagactccgt gaagggccgg ttcaccatct ccagagacaa cgccaagaac 300
 tcactgtatc tgcaaatgaa cagcctgaga gccgaggaca cggctgtgta ttactgtgctg 360
 agagataccc gaggggtactt cgatctctgg ggccgtggca ccctgggtcac cgtctcctca 420
 ggtggcggag ggtcatctga gctgactcag gaccctgcta tgtctgtggc cttgggacag 480
 acagtcagaa tcacatgtca aggggacagt ctcagaaagt atcatgcaag ctggtatcag 540
 cagaagccag ggcaggcccc tgttcttgtc atctatggta agaatgaacg tccctcaggg 600
 atcccagagc gattctctgg gtccacctca ggagacacag cttccttgac catcagtggg 660
 ctccaggcgg aagatgaggc tgactattac tgtcactccc gagactctaa tgctgatctt 720
 gtggtgttcg gcggaggggac caaggtcacc gtcctaggtg gcggcggaag cggcgagggc 780
 tccatgagct acaacttgct tggattccta caaagaagca gcaattttca gtgtcagaag 840
 ctctgtggc aattgaatgg gaggcctgaa tactgcctca aggacaggat gaactttgac 900
 atccctgagg agattaagca gctgcagcag ttccagaagg aggacgccgc attgaccatc 960
 tatgagatgc tccagaacat ctttgctatt ttcagacaag attcatctag cactggctgg 1020
 aatgagacta ttgttgagaa cctcctggct aatgtctatc atcagataaa ccatctgaag 1080
 acagtcctgg aagaaaaact ggagaaagaa gatttcacca ggggaaaact catgagcagt 1140
 ctgcacctga aaagatatta tgggaggatt ctgcattacc tgaaggccaa ggagtacagt 1200
 cactgtgcct ggaccatagt cagagtggaa atcctaagga acttttactt cattaacaga 1260
 cttacaggtt acctccgaaa ctaa 1284

<210> 30
 <211> 37
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Primer

USSN 10.754484 Sequence Listing (19Oct2004).txt

<400> 30
gactgatatc gccaccatga gtgtgaaggc catggct 37

<210> 31
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 31
atcaaaaaag ttgaaagaaa gaattttggg ggtggaggca gc 42

<210> 32
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 32
gctgcctcca cccccaaaat tctttctttc aacttttttg at 42

<210> 33
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 33
gggggtggag gcagccaggt acagctgcag caatca 36

<210> 34
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 34
caaggtcacc gtcctaggtt aagcgccgc 30

<210> 35
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 35
gcggccgctt aacctaggac ggtgaccttg 30

<210> 36
<211> 1371
<212> DNA
<213> Homo sapiens

USSN 10.754484 Sequence Listing (19Oct2004).txt

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<400> 36
ctccttccaa gaagagcagc aaagctgaag tagcagcaac agcaccagca gcaacagcaa 60
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gttgttcaag gcttcccat gttcaaaaga ggacgctgtc ttgcatagg ccctgggta 180
aaagcagtga aagtggcaga tattgagaaa gcctccataa tgtaccaag taacaactgt 240
gacaaaatag aagtgattat taccctgaaa gaaaataaag gacaacgatg cctaaatccc 300
aaatcgaagc aagcaaggct tataatcaaa aaagttgaaa gaaagaattt ttaaaaatat 360
caaaacatat gaagtcctgg aaaagggcat ctgaaaaacc tagaacaagt ttaactgtga 420
ctactgaaat gacaagaatt ctacagtagg aaactgagac ttttctatgg ttttgtgact 480
ttcaactttt gtacagttat gtgaaggatg aaagggtgggt gaaaggacca aaaacagaaa 540
tacagtcttc ctgaatgaat gacaatcaga attccactgc ccaaaggagt ccagcaatta 600
aatggatttc taggaaaagc taccttaaga aaggctgggt accatcggag tttacaaagt 660
gctttcacgt tcttacttgt tgtattatac attcatgcac ttctaggcta gagaaccttc 720
tagattttgat gcttacaact attctgttgt gactatgaga acatttctgt ctctagaagt 780
tatctgtctg tattgatctt tatgctatat tactatctgt ggttacagtg gagacattga 840
cattattact ggagtcagc ccttataagt caaaagcatc tatgtgtcgt aaagcattcc 900
tcaaacattt tttcatgcaa atacacaytt ctttcccaa atatcatgta gcacatcaat 960
atgtagggaa acattcttat gcatcatttg gtttgtttta taaccaattc attaaatgta 1020
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gagatgtttt gaagcaatta ggatattgtg gtttactgta ctttttggtt tgatccggtt 1200
gtataaatga tagcaatatc ttggacacat ttgaaatata aaatgttttt gtctaccaa 1260
gaaaaatgtt gaaaaataag caaatgtata cctagcaatc acttttactt tttgtaattc 1320
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```

<210> 37
<211> 5
<212> PRT
<213> Artificial Sequence

```

```

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

```

```

<400> 37
Leu Arg Lys Glu Asp
 1          5

```

```

<210> 38
<211> 7
<212> PRT
<213> Artificial Sequence

```

```

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

```

```

<400> 38
Gln Leu Phe Val Asn Glu Glu
 1          5

```

```

<210> 39
<211> 5
<212> PRT
<213> Artificial Sequence

```

```

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

```

```

<400> 39
Leu Asn Gln Leu Thr
 1          5

```

USSN 10.754484 Sequence Listing (19Oct2004).txt

<210> 40
 <211> 5
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 40
 Tyr Trp Cys Lys Trp
 1 5

<210> 41
 <211> 5
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 41
 Gly Trp Tyr Trp Cys
 1 5

<210> 42
 <211> 6
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 42
 Ser Thr Leu Val Pro Leu
 1 5

<210> 43
 <211> 5
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 43
 Ser Tyr Arg Thr Asp
 1 5

<210> 44
 <211> 6
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 44
 Gln Asp Pro Arg Leu Phe

1

5

<210> 45
 <211> 5
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 45
 Lys Arg Ser Ser Lys
 1 5

<210> 46
 <211> 5
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Linker peptide

<400> 46
 Gly Gly Gly Gly Ser
 1 5

<210> 47
 <211> 4
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Linker peptide

<400> 47
 Gly Ser Gly Ser
 1

<210> 48
 <211> 4
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Linker peptide

<400> 48
 Gly Ser Ser Gly
 1

<210> 49
 <211> 6
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: 6-His tag

<400> 49
 His His His His His His
 1 5

USSN 10.754484 Sequence Listing (19Oct2004).txt

<210> 50
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Linker peptide

<400> 50
 Gly Gly Gly Ser Gly Gly Gly Ser
 1 5

<210> 51
 <211> 6
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Linker peptide

<400> 51
 Gly Gly Ser Gly Gly Ser
 1 5

<210> 52
 <211> 5
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Linker peptide

<400> 52
 Gly Gly Gly Gly Cys
 1 5

<210> 53
 <211> 774
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Nucleotide
 sequence of pIgR-directed sFV (APLP10)

<400> 53
 atgaaatacc tattgcctac ggcagccgct ggattgttat tactcgcggc ccagccggcc 60
 atggcccagg tacagctgca gcaatcaggg ggaggcgtgg tccagcctgg gaggtccctg 120
 agactctcct gtgcagcctc tggattcacc ttcagtagct atgctatgca ctgggtccgc 180
 caggctccag ggaaggggct ggagtgggtc tcagctatta gtggtagtgg tggtagcaca 240
 tactacgcag actccgtgaa gggccgggtc accatctcca gagacaacgc caagaactca 300
 ctgtatctgc aaatgaacag cctgagagcc gaggacacgg ctgtgtatta ctgtgcgaga 360
 gatacccagag ggtacttcga tctctggggc cgtggcacc tggtcaccgt ctctcagggt 420
 ggcggagggt catctgagct gactcaggac cctgctatgt ctgtggcctt gggacagaca 480
 gtcagaatca catgtcaagg ggacagtctc agaaagtatc atgcaagctg gtatcagcag 540
 aagccagggc aggccctgt tcttgctatc tatggtaaga atgaacgtcc ctgaggatc 600
 ccagagcgat tctctgggtc cacctcagga gacacagctt ccttgaccat cagtgggctc 660
 caggcggaag atgaggctga ctattactgt cactcccag actctaagc tgatcttgtg 720
 gtgttcggcg gagggaccaa ggtcaccgtc ctaggttaat aagtcgacct cgac 774

<210> 54
 <211> 1197
 <212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Nucleotide
sequence of pIgR-directed sFV-IL-2 fusion construct

<400> 54

| | | | | | | |
|-------------|-------------|------------|------------|------------|-------------|------|
| atgaaatacc | tattgcctac | ggcagccgct | ggattgttat | tactcgcggc | ccagccggcc | 60 |
| atggcccagg | tacagctgca | gcaatcaggg | ggaggcgtgg | tccagcctgg | gaggtcccctg | 120 |
| agactctcct | gtgcagcctc | tggattcacc | ttcagtagct | atgctatgca | ctgggtccgc | 180 |
| caggctccag | ggaaggggct | ggagtgggtc | tcagctatta | gtggtagtgg | tggtagcaca | 240 |
| tactacgcag | actccgtgaa | gggccggttc | accatctcca | gagacaacgc | caagaactca | 300 |
| ctgtatctgc | aaatgaacag | cctgagagcc | gaggacacgg | ctgtgtatta | ctgtgcgaga | 360 |
| gatacccag | ggtacttcga | tctctggggc | cgtggcaccc | tggtcaccgt | ctcctcaggt | 420 |
| ggcggagggg | catctgagct | gactcaggac | cctgctatgt | ctgtggcctt | gggacagaca | 480 |
| gtcagaatca | catgtcaagg | ggacagtctc | agaaagtatc | atgcaagctg | gtatcagcag | 540 |
| aagccagggc | aggcccctgt | tcttgctatc | tatggtaaga | atgaacgtcc | ctcagggatc | 600 |
| ccagagcgat | tctctgggtc | cacctcagga | gacacagctt | ccttgaccat | cagtgggctc | 660 |
| caggcggaag | atgaggctga | ctattactgt | cactcccag | actctaagtc | tgatcttggtg | 720 |
| gtgttcggcg | gagggaccaa | ggtcacctgc | ctaggtggcg | gcggaagcgg | cggaggctcc | 780 |
| gcacctactt | caagttctac | aaagaaaaca | cagctacaac | tggagcattt | acttctggat | 840 |
| ttacagatga | ttttgaatgg | aattaataat | tacaagaatc | ccaaactcac | caggatgctc | 900 |
| acattttaagt | tttacaatgcc | caagaaggcc | acagaactga | aacatcttca | gtgtctagaa | 960 |
| gaagaactca | aacctctgga | ggaagtgcga | aatttagctc | aaagcaaaaa | ctttcactta | 1020 |
| agaccagggg | acttaatcag | caatatcaac | gtaatagtcc | tggaactaaa | gggatctgaa | 1080 |
| acaacattca | tgtgtgaata | tgctgatgag | acagcaacca | ttgtagaatt | tctgaacaga | 1140 |
| tggattacct | tttgtcaaag | catcatctca | acactaactt | aataactcga | ggaatttc | 1197 |